

# EUROPEAN PATENT OFFICE

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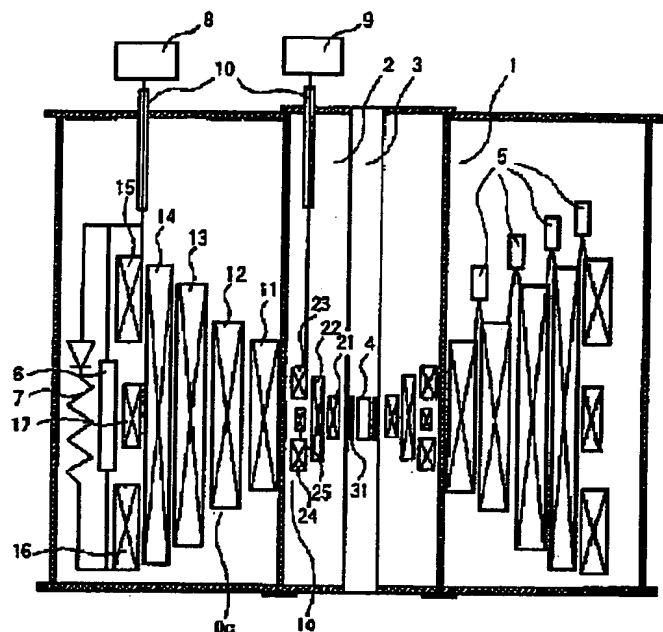
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TITLE : SUPERCONDUCTING MAGNET  
DEVICE FOR NMR ANALYZER AND  
ITS OPERATING METHOD



**ABSTRACT :** **PURPOSE:** To generate a stable and high magnetic field which can realize an NMR analyzer by a method wherein, when an inner-layer coil and an outer-layer coil are operated, the magnetic homogeneity in a magnetic-field space part is set to a prescribed value and a shim coil is arranged and installed in such a way that also the magnetic homogeneity is set to a prescribed value when an inner coil system is removed.

**CONSTITUTION:** An outer-layer coil system Oc is constituted of seven coils 11 to 17. Out of the coils 11 to 17, the coils 11, 12 which are situated at the inside are formed of an  $(\text{Nb-Ti})_3\text{Sn}$  compound superconducting wire, and the other coils 13 to 17 are formed of an Nb-Ti alloy-based wire material so as to be wound. In addition, an inner-layer coil system Ic is formed by connecting five coils 21 to 25 in series, and the coils 21 to 25 are arranged coaxially with reference to the central axis. Then, a shim coil 31 is arranged in such a way that, when coils for the inner-layer and outer-layer coil systems Oc, Ic are operated, the magnetic uniformity in a magnetic-field space part satisfies a prescribed value and that, when the inner-layer coil system Ic is removed, also the magnetic uniformity satisfies a prescribed value, and a stable and high magnetic field is generated.

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